

Finding Real and Complex Zeros of a Polynomial

Lesson 093 | Algebra II | Polynomial zeros and division • Factoring polynomials

<https://www.youtube.com/watch?v=35eqTxtQ0C8>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01 Find every real and complex zero: $x^2 - 3x - 88$.

02 Factor completely over the real numbers: $x^3 - 12x^2 + 100x - 1200$.

03 Find every real and complex zero: $x^4 - 265x^2 + 17424$.

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04

Factor completely over the real numbers: $x^2 - 7x - 30$.

05

Find every real and complex zero: $x^3 - 10x^2 + 49x - 490$.

06

Factor completely over the real numbers: $x^4 - 340x^2 + 28224$.

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01 Find every real and complex zero: $x^2 - 3x - 88$.

Factorization: $(x - 11)(x + 8)$. Zeros: -8, 11.

02 Factor completely over the real numbers: $x^3 - 12x^2 + 100x - 1200$.

Factorization: $(x - 12)(x^2 + 100)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.

03 Find every real and complex zero: $x^4 - 265x^2 + 17424$.

Factorization: $(x - 12)(x - 11)(x + 11)(x + 12)$. Zeros: -12, -11, 11, 12.

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04

Factor completely over the real numbers: $x^2 - 7x - 30$.

Factorization: $(x - 10)(x + 3)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.

05

Find every real and complex zero: $x^3 - 10x^2 + 49x - 490$.

Factorization: $(x - 10)(x^2 + 49)$. Zeros: 10.

06

Factor completely over the real numbers: $x^4 - 340x^2 + 28224$.

Factorization: $(x - 14)(x - 12)(x + 12)(x + 14)$. Expand the factors to check the original expression. Quadratic factors with negative discriminant remain irreducible over the reals.